CLAIMS:

1. A method for measuring bandwidth between two entities on a network, the method comprising:

receiving at least one first non-compressible packet having measurable characteristics;

calculating bandwidth based upon, at least partially, characteristics of the first non-compressible packet.

Sub A1

2. A method as recited in claim 1, wherein the first non-compressible packet is approximately fragmentation-avoidance size.

3. A method as recited in claim 1, wherein the first non-compressible packet is highly entropic.

4. A method as recited in claim 1, wherein the first non-compressible packet is formatted for TCP.

5. A method as recited in claim 1, wherein the first non-compressible packet is formatted for UDP.

6. A method as recited in claim 1 further comprising:

after receiving the first packet, receiving a second non-compressible packet having measurable characteristics including a packet size (PS) and a time of receipt (t_3);

wherein the measurable characteristics of the first packet include a packet size, which is equivalent to the packet size of the second packet, and a time of receipt (t_1);

wherein bandwidth (bw) is calculated, during the calculating, by this formula:

$$bw = \frac{PS}{t_3 - t_1}$$

7. A method as recited in claim 1 further comprising querying a modem of an entity about a bandwidth setting of the modem when result of calculating bandwidth is outside a given range of believability.

8. A method as recited in claim 1 further comprising storing result of calculating bandwidth within a list of recent bandwidth measurements.

9. A method as recited in claim 1 further comprising:

storing result of calculating bandwidth within a list of recent bandwidth measurements;

finding a statistical derivation from such list, such derivation representing a most likely actual bandwidth between the two entities.

Sub A1

10. A method as recited in claim 1 further comprising:

storing result of calculating bandwidth within a list of recent bandwidth measurements;

finding a median of such list, such median representing a most likely actual bandwidth between the two entities.

11. A program module having computer-executable instructions that, when executed within a computing operating environment at an application layer, performs the method as recited in claim 1.

12. A computer-readable medium having computer-executable instructions that, when executed by a computer, performs the method as recited in claim 1.

13. A method for measuring bandwidth between two entities on a network, the method comprising:

receiving a first non-compressible packet;

receiving a second non-compressible packet;

calculating bandwidth based upon the first and second non-compressible packets.

14. A method as recited in claim 13, wherein bandwidth (bw) is calculated, during the calculating, by this formula:

$$bw = \frac{PS}{t_3 - t_1}$$

15. A method as recited in claim 13, wherein the first and second non-compressible packets are approximately fragmentation-avoidance size.

16. A method as recited in claim 13, wherein the first and second non-compressible packets are highly entropic.

17. A method as recited in claim 13, wherein the first and second non-compressible packets are formatted for TCP.

18. A method as recited in claim 13, wherein the first and second non-compressible packets are formatted for UDP.

19. A method for measuring bandwidth between two entities on a network, the method comprising:

sending at least one first non-compressible packet;

receiving a bandwidth calculation based upon, at least partially, measurements related to the first non-compressible packet.

20. A method as recited in claim 19, wherein the first non-compressible packet is approximately fragmentation-avoidance size.

21. A method as recited in claim 19, wherein the first non-compressible packet is highly entropic.

22. A method as recited in claim 19, wherein the first non-compressible packet is formatted for TCP.

23. A method as recited in claim 19, wherein the first non-compressible packet is formatted for UDP.

24. A method as recited in claim 19 further comprising sending a second non-compressible packet immediately after sending the first packet and before receiving a bandwidth calculation, wherein the first and second packets are equivalent in size.

25. A method as recited in claim 19, after the receiving, further comprising:

selecting a file formatted for a given bandwidth that is equal to or less than the bandwidth calculation;

sending such file.

26. A method as recited in claim 19, after the receiving, further comprising:

selecting a subfile formatted for a given bandwidth that is equal to or less than the bandwidth calculation;

sending such subfile.

27. A method as recited in claim 19, before the sending, further comprising selecting the first non-compressible packet from a set of differing non-compressible packets.

28. A method as recited in claim 19, before the sending, further comprising generating the first non-compressible packet.

29. A computer-readable medium having computer-executable instructions that, when executed by a computer, performs the method as recited in claim 19.

30. A method for measuring bandwidth between two entities on a network, the method comprising:

sending a first non-compressible packet;

sending a second non-compressible packet immediately after the sending of the first packet.

31. A method as recited in claim 30 further comprising receiving a bandwidth calculation based upon measurements related to the first and second non-compressible packets.

32. A method as recited in claim 30, wherein the first and second non-compressible packets are approximately fragmentation-avoidance size.

33. A method as recited in claim 30, wherein the first and second non-compressible packets are highly entropic.

34. A method as recited in claim 30, wherein the first and second non-compressible packets are formatted for TCP.

35. A method as recited in claim 30, wherein the first and second non-compressible packets are formatted for UDP.

36. A computer-readable medium having computer-executable instructions that, when executed by a computer, performs the method as recited in claim 30.

SUB A1

37. A method of approximating a bandwidth between two entities on a network, the method comprising:

generating a list of entries, each entry containing a recent bandwidth measurement;

each measurement being based upon a packet-pair bandwidth calculation of different pairs of packets.

38. A method as recited in claim 37 further comprising replacing a measurement in an entry with a most recently calculated measurement.

39. A method as recited in claim 37, wherein the packets, which are the basis for the packet-pair bandwidth calculation, are non-compressible.

40. A method as recited in claim 37, wherein the packets, which are the basis for the packet-pair bandwidth calculation, are highly entropic.

41. A computer-readable medium having computer-executable instructions that, when executed by a computer, performs the method as recited in claim 37.

42. A computer-readable medium having stored thereon a data structure, comprising:

a list of entries, each entry being a recent bandwidth measurements;

each entry being based upon a packet-pair bandwidth calculation of different pairs of packets.

43. A computer-readable medium having computer-executable instructions that, when executed by a computer, perform a method to measure bandwidth between two entities on a network, the method comprising:

receiving a first non-compressible packet;

receiving a second non-compressible packet;

calculating bandwidth based upon the first and second non-compressible packets.

44. A computer-readable medium having computer-executable instructions that, when executed by a computer, perform a method to measure bandwidth between two entities on a network, the method comprising:

sending a first non-compressible packet;

sending a second non-compressible packet immediately following the sending of the first packet.

45. A computer-readable medium having computer-executable instructions that, when executed by a computer, perform a method to approximate a bandwidth between two entities on a network, the method comprising:

generating a list of entries, each entry containing a recent bandwidth measurement;

each measurement being based upon a packet-pair bandwidth calculation of different pairs of packets.

46. A modulated data signal having data fields encoded thereon transmitted over a communications channel, comprising:

a first packet containing non-compressible data;

a second packet following the first packet, the second packet containing non-compressible data.

47. The modulated data signals as recited in claim 46, wherein the first and second packets are approximately fragmentation-avoidance size.

48. The modulated data signals as recited in claim 46, wherein the first and second packets are highly entropic.

49. The modulated data signals as recited in claim 46, wherein the first and second packets are formatted for TCP.

50. The modulated data signals as recited in claim 46, wherein the first and second packets are formatted for UDP.

51. An apparatus comprising:

a processor;

a bandwidth measurer executable on the processor to:

receive a first non-compressible packet having measurable characteristics;

receive a second non-compressible packet having measurable characteristics;

calculate bandwidth based upon characteristics of the first and second non-compressible packets.

52. An apparatus comprising:

a processor;

a bandwidth measurer executable on the processor to:

sending a first non-compressible packet;

sending a second non-compressible packet immediately following the sending of the first packet.